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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

APPLICANT: RICHARD COOPER, ET AL.
TITLE: POLISHING PAD FOR USE IN CHEMICAL-....
SERIAL No.: 10/087,223
FILING DATE: MARCH 1, 2002
GROUP: ART UNIT
EXAMINER:

RECEIVED
JUN 13 2003
TECHNOLOGY CENTER 2800

To: Hon. Commissioner of Patents & Trademarks
Washington, D.C. 20231

SUPPLEMENT TO PETITION TO MAKE SPECIAL

Sir:

In response to the Decision on Petition to Make Special dated May 19, 2003,
Applicants hereby submit the following discussion of the prior art in accordance with
Section 708.02, Item VIII, of the M.P.E.P.,

“Prior Art Cited in First Information Disclosure Statement”

U.S. Patent No. 4,728,552 – Jensen, et al., discloses a substrate for use in
polishing materials, such as semiconductor wafers. This patent does not disclose the use
of paper-making fibers made by a paper-making process as in the present invention, as
claimed in independent claims 1, 18, 23, 32 or 45. The substrate of this patent is made of
a felt-sheet.

U.S. Patent No. 4,927,432 – Budinger, et al. discloses the typical, prior-art type
of polishing pad made of polyurethane, reinforced with a felt-mat and bound by a

thermoplastic resin or epoxy. . This is contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45.

U.S. Patent No. 5,257,478 – Hyde, et al., also discloses a typical, prior-art type of polishing pad made of polyurethane, as in the above-described U.S. Patent No. U.S. Patent No. 4,927,432 – Budinger, et al., which, also is in contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 5,489,233 – Cook, et al., like Budinger, et al., also discloses the typical, prior-art type of polishing pad made of polyurethane, reinforced with a felt-mat and bound by a thermoplastic resin. This is contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No.5,578,362 – Reinhardt, et al., like Cook, et al., also discloses the typical, prior-art type of polishing pad made of polyurethane, reinforced with a felt-mat and bound by a thermoplastic resin. This is contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 5,605,760 - Roberts., discloses a polishing pad made of a solid sheet of polyurethane-impregnated polyester felts, or other polymers (see column 3, second paragraph). This is contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 5,769,691 – Fruitman discloses a polishing pad for chemical/mechanical planarization of semiconductor wafers that is made of such material such as fused polyethylene, flexibilized epoxy, or non-cellular urethane (see claim 6). This is contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 5,900,164 – Budinger, et al., like the other Budinger, et al., patent cited above, discloses the typical, prior-art type of polishing pad made of polyurethane. This is contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 6,022,264 – Cook, et al., like the other Cook, et al. patent discussed above, also discloses the typical, prior-art type of polishing pad made of polyurethane, or similar material thereto (see table in columns 3 and 4). This is contrast to the polishing pad of the present invention that is made from of paper-making fibers

made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 6,022, 268 – Roberts, et al, discloses also discloses the typical, prior-art type of polishing pad made of polyurethane, or similar material thereto (see table in column 3, lines 41-61 and the table in columns 3 and 4). This is contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 6,217,434 – Roberts, et al. discloses also discloses the typical, prior-art type of polishing pad made of polyurethane, or similar material thereto (see table in column 5, lines 41-61 and the table in columns 5 and 6). This is contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 6,280,290 – Birang, et al. discloses a method of making a window using a transparent plug in a polishing pad, which window is used for passing a laser beam for determining the end-point of planarization of a substrate. This patent has no bearing on the present invention, as claimed.

U.S. Patent No. 6,287,185 – Roberts, et al. like the other Roberts, et al. patents discussed above, discloses a polishing pad made of polyurethane, or similar material

thereto (see table in column 5). This is contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 6,293,852 – Roberts, et al., like the other Roberts, et al. patents discussed above, discloses a polishing pad made of polyurethane, or similar material thereto (see table in column 6). This is contrast to the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 6,300,247 – Venkataranan discloses a method of preconditioning polishing pads prior to first use, and, as such, has no relevance to the polishing pad of the present invention made of from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 6,300,255 – Jensen, et al., discloses a method and apparatus for chemical-vapor deposition on semiconductor wafers, and, as such, has no has no relevance to the polishing pad of the present invention made of from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

EPO published patent application number 1118432 discloses a polishing pad -----

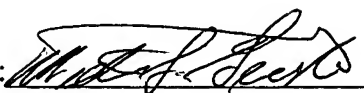
“Prior Art Cited in Concurrently-Filed Supplemental Information Disclosure Statement”

U.S. Patent No. 3,499,250 – Jensen et al., discloses a multi-layered porous polishing cloth made of Corfoam which is a poromeric material of polyurethane reinforced polyester. This patent does not disclose the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 3,504,457 – Jacobsen., is similar to above-discussed U.S. Patent No. 3,499,250 – Jensen et al., and discloses a multi-layered porous polishing cloth made of Corfoam which is a poromeric material of polyurethane reinforced polyester. This patent does not disclose the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45, and which is bound by a thermoset resin, as claimed in independent claims 1, 23, 32, and 45.

U.S. Patent No. 6,383,066 – Chen et al. discloses a multi-layered polishing pad for chemical-mechanical polishing of semiconductor wafers, which layers are made of fibers made of polyester, polycarbonate, etc. , as listed in column 3, lines 32-45). The fibers are encapsulated in a matrix of polyurethane. This patent does not disclose the polishing pad of the present invention that is made from of paper-making fibers made by a paper-making process as in the present invention, as claimed in independent claims 1, 18, 23, 32 or 45.

Respectfully submitted,

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